The Road Ahead: Examining the Outlook of Regulation for Self-Driving Cars

The market for fully autonomous vehicles is experiencing rapid growth. The global market size of self-driving cars and trucks is expected to grow from 670,000 units in 2020 to 4.223 million units in 2030 at a Compounded Annual Growth Rate (CAGR) of 63.1\%. In North America, this accounts for growth from 310,000 units to approximately 2.05 million units in the same period.

**North America self driving cars & trucks market size, by application, 2020-2030 (Thousand Units)**

- **Transportation**
- **Defense**
This forecasted growth in the self-driving car industry is largely due to increased demand from businesses and consumers. With a current global valuation of $54 billion, the autonomous vehicle market will only continue to grow, as 55% of small businesses believe they will have a fully autonomous fleet in the next 20 years and 57% of people familiar with the concept of self-driving cars are willing to ride inside them. Even legacy automakers are heavily investing in self-driving technology: Audi alone will spend $16 billion on self-driving cars by 2023. However, while there is great support for the growth of the self-driving car industry, there is also hesitation.1 One possible reason for the hesitancy is the lack of clear regulations that will govern the self-driving car industry.

At this time, the regulatory landscape for self-driving cars is still developing, but a framework is beginning to evolve that is impactful for industry stakeholders. This article will summarize the existing regulations and proposed future regulations for self-driving cars.

### Current State of Regulations for Self-Driving Cars

There are several agencies directly involved in the national oversight of autonomous vehicles, including: the S.S. Department of Transportation ("DOT"), the Federal Highway Administration ("FHA"), the Federal Transit Administration ("FTA"), and the National Highway Traffic Safety Administration ("NHTSA").2

The current federal framework for regulation of self-driving cars is explained in two plans put forth by the DOT. The first plan, called Ensuring American Leadership in Automated Vehicle Technologies (AV 4.0), represents the latest version of an ongoing evolution of preparation for emerging technologies and addressing public concerns about safety, security, and privacy. In AV 4.0, released in January 2020, there are three core interests addressed, each with its own sub-areas.3

The core interests and sub-elements are structured as follows:

<table>
<thead>
<tr>
<th>Market Size 2020-2030</th>
<th>2020</th>
<th>2025</th>
<th>2030</th>
</tr>
</thead>
<tbody>
<tr>
<td>670,000 Units</td>
<td>1.4 Million Units</td>
<td>4.223 Million Units</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Regional Market Size</th>
<th>Application</th>
<th>2017</th>
<th>2024</th>
</tr>
</thead>
<tbody>
<tr>
<td>North America</td>
<td>41.0%</td>
<td>48.7%</td>
<td></td>
</tr>
<tr>
<td>Europe</td>
<td>35.0%</td>
<td>33.8%</td>
<td></td>
</tr>
<tr>
<td>Asia Pacific</td>
<td>24.0%</td>
<td>16.8%</td>
<td></td>
</tr>
<tr>
<td>Latin America</td>
<td>0.0%</td>
<td>0.3%</td>
<td></td>
</tr>
<tr>
<td>Middle East &amp; Africa</td>
<td>0.0%</td>
<td>0.4%</td>
<td></td>
</tr>
</tbody>
</table>
I. Core Interest 1: Protect Users and Communities
   • A. Prioritize Safety.
   • B. Emphasize Security and Cybersecurity.
   • C. Ensure Privacy and Data Security.
   • D. Enhance Mobility and Accessibility.

II. Core Interest 2: Promote Efficient Markets
   • A. Remain Technology Neutral.
   • B. Protect American Innovation and Creativity.
   • C. Modernize Regulations.

III. Core Interest 3: Facilitate Coordinated Efforts
   • A. Promote Consistent Standards and Policies.
   • B. Ensure a Consistent Federal Approach.
   • C. Improve Transportation System-Level Effects.

Along with AV 4.0, the DOT published its Automated Vehicles Comprehensive Plan in January 2021. This plan builds upon the foundation set by AV 4.0 and states three goals for its vision for Automated Driving Systems (ADS).5

These three goals are defined as follows:

I. Goal 1: Promote Collaboration and Transparency.

II. Goal 2: Modernize the Regulatory Environment. This goal has three subgoals, each with their own objectives. The subgoals of this main goal include:
   • A. Streamlining Paths to Deployment.
   • B. Updating Existing Regulations to Remove Unnecessary Barriers.
   • C. Conducting Appropriate Safety Oversight of ADS.

III. Goal 3: Prepare the Transportation System.

Despite the goals defined in these plans, however, the U.S. has faced great criticism for the lack of a strong set of safety protocols for autonomous vehicles. Within the Global Guide to Autonomous Vehicles 2021, Dentons states that: “The United States does not have a federal regulatory framework currently in place to address autonomous vehicle testing and deployment. As a result, testing and deployment is regulated by a state-centric patchwork of laws.” This references the 40 U.S. states that have passed individual regulations for autonomous vehicle testing. With the lack of uniformity for regulations across states, along with public instances of safety accidents for AV testing, Congress is being urged to make more steps to develop a stronger federal framework to address these safety issues.6

Where Regulation of the Industry is Headed

The future of regulation for self-driving cars involves several factors. Some recent news points to significant progress for creating a safety framework. However, there are other recent contentions between government agencies displaying different opinions on what safety in this industry should look like, as well. Regardless of the effect of recent events on the progress of building a safety framework, they will greatly affect how the federal agencies involved in creating this framework think about the regulatory decisions they have vowed to continue this year.

More positive progress may come from public/private collaborations. The University of Warwick and Deepen AI, an autonomous technology company, have recently collaborated to create the Safety Pool Scenario Database, which stores public scenarios for testing AVs. Dr. Siddartha Khastgir of the WMG department at Warwick University noted that this way of testing and validating ADS in a transparent way will provide necessary insights to the readiness of systems, which will lead to more efficient adoption worldwide.7 In addition to this system, the Self-Driving Coalition is currently working with Congress and DOT to establish a federal framework for safety in AVs. This framework has
the goal of stating the potential of autonomous vehicles to save lives, as human error is a large contributing factor of accidents, so the introduction of this technology will make roads safer.8

While this may be true, there have been contentions on how to move forward with safety regulation as well. Under the Trump Administration, loosely structured regulations allowed self-driving vehicle manufacturers to skip certain crash safety requirements for vehicles that were not designed to carry people. As argued by the NHTSA Deputy Administrator, since “more than 90% of serious crashes are caused by driver error, it’s vital that we remove unnecessary barriers to technology that could help save lives.” However, this was met with great pushback from the Center for Auto Safety, arguing that while the NHTSA’s strategy would be the fastest way to deploy this technology, it does not employ a consumer-safety driven approach, which should be a priority.9 While these policies were recently put into action by the Trump Administration, they will likely be superseded by the Biden Administration.10 There is also the barrier of ongoing debates in Congress that have blocked bills from passing in both the House and Senate. While a uniform approach has not yet been established, Sens. Thune and Peters are committed to advancing AV legislation in this Congress. As mentioned by a spokesperson for Sen. Peters, “the current patchwork of voluntary guidance at the federal level is simply not sufficient to ensure the United States can remain a global leader on auto innovation,” implying there is a strong momentum for debate this topic this year to come to a solution. Finally, the National Transportation Safety Board (NTSB) has recently voiced its criticisms of how the NHTSA is conducting a “hands-off” approach to regulating driver assistance systems and autonomous vehicles by sending them a letter urging them to impose stricter rules on these issues. Within the letter, NTSB mentions that “NHTSA’s general and voluntary guidance of emerging and evolutionary technological advances shows a willingness to let manufacturers and operational entities define safety. We urge NHTSA to lead with detailed guidance and specific standards and requirements.”2 Since the NTSB does not have the control over establishing regulations and must follow the lead of how the NHTSA chooses to create safety standards, this letter may have a great effect on how they update regulations in the near future to avoid other public failures in safety testing.

The road ahead for autonomous vehicles is complicated. While current regulations emphasize the importance of safety and unification, the neutral tone and encouragement of states making their own safety standards results in a weak foundation of safety requirements that several sources have called for opinions on from the U.S. government. Some of the current solutions to creating this federal framework have true promise, but it will be interesting to see what comes from the conversations in Congress that were promised to pick up this year.

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Brianna Jordan was a contributing author to this alert.

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